



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

## Department of Fish and Game

DIVISION OF COMMERCIAL FISHERIES  
Westward Region Office

351 Research Court  
Kodiak, Alaska 99615-7400  
Main: 907.486.1825  
Fax: 907.486.1841

### MEMORANDUM

TO: Nick Sagalkin  
Regional Supervisor  
Division of Commercial Fisheries  
Westward Region

DATE: November 9, 2016

THRU: Jeff Wadle  
Regional Finfish Management Supervisor  
Division of Commercial Fisheries  
Kodiak

FROM: James Jackson  
Area Management Biologist  
Division of Commercial Fisheries  
Kodiak

SUBJECT: 2016 Kodiak Management Area Season Summary

cc:	Witteveen	United Salmon Association
Cotten	Polum	Kodiak Island Borough
Kelley	Fuerst	Ocean Beauty Seafoods
Schaberg	Lingnau	Alaska Pacific Seafoods
Bowers	Elison	Western Alaska Seafoods
Murphy	Salomone	Icicle Seafoods
Wilburn	Dupuis	True World Seafoods
Spalinger	Fall	Trident Seafoods
Wilson	Russell	Island Seafoods
Lipka	Lechner	Alaska Fresh Seafoods
Anderson	KRAA, T. Fairbanks	USFWS – OSM, Fried
Wattum	KRAA, Kitoi Hatchery	USFWS – Kodiak
Foster	Fair	City of Kodiak
Schrof	Shields	Sand Point Advisory Committee
Fox	Sands	Chignik Advisory Committee
Stumpf	Fisher	Kodiak Advisory Committee
Finkle	Dorner	UFMA - Stephens
Linderman	Stratton	United Chignik Salmon Fishermen
Miller	Loewen	



Figure 1.—Map of the commercial salmon fishing districts in the Kodiak Management Area.

The commercial fishing effort in 2016 decreased compared to recent years. Of the 592 eligible commercial salmon permits, 305 (52%) made commercial landings. By gear type, a total of 165 purse seine, 3 beach seine, and 137 set gillnet permit holders made deliveries in 2016. Participation by purse seine permit holders was above average while set gillnet permit holder participation was below the previous 10-year average (Table 1).

Table 1. Commercial salmon fishery 2016 limited entry permit activity and 10-yr. averages, by gear type, in the Kodiak Management Area, 2016.

Gear Type	2016 Permits			2006-2015 Average Permits		
	Available	Fished	% of permits fished	Available	Fished	% of permits fished
Purse Seine	374	165	44%	375	159	42%
Beach Seine	30	3	10%	31	3	10%
Set Gillnet	188	137	73%	188	152	81%
Total	592	305	52%	594	313	53%

The 2016 commercial harvest (not including personal use or ADF&G Test Fishery) in the Kodiak Management Area (KMA) was 7,478 Chinook salmon, 2,063,472 sockeye salmon, 206,540 coho salmon, 3,245,549 pink salmon, and 403,879 chum salmon. The total Kodiak areawide harvest (including KRAA cost recovery) of 5,926,918 salmon was well below the 2016 forecast and the previous 10-year average of approximately 24,068,105 salmon (Table 2).

Table 2.—2016 commercial salmon harvest for KMA compared to the previous 10-year average and the 2016 harvest forecast.

	Chinook	Sockeye	Coho	Pink	Chum	Total
2016 Harvest	7,478	2,063,472	206,540	3,245,549	403,879	5,926,918
2006-2015 Avg.	16,019	2,200,839	329,952	20,721,265	800,030	24,068,105
2016 Forecast	15,000	3,408,000	330,000	16,193,000	643,000	20,589,000

Note: harvest numbers do not include harvest from the ADF&G test fisheries or personal use but includes cost recovery.

The estimated exvessel value of the 2016 fishery was approximately \$14.5 million. This was the fourth lowest value since 1975 and well below the previous 10-year average exvessel value of \$36.2 million (Table 3).

Purse seine fishermen accounted for the majority of the total harvest (in number of fish) and their earnings averaged \$66,243 per fished permit. Set gillnet earnings averaged \$25,972 per permit fished. Beach seine earnings averaged \$7,111 per permit fished.

Table 3.—Estimated commercial salmon harvest and value, by gear type, in the Kodiak Management Area, 2006 - 2016.

Year	Total Catch <sup>a</sup>	Total Value <sup>b</sup>	Average Exvessel Value		
			Purse Seine	Gillnet	Beach Seine
2006	32,595,862	\$24,820,388	\$150,038	\$33,926	<sup>c</sup>
2007	26,239,484	\$28,174,695	\$148,504	\$41,404	\$3,484
2008	10,127,638	\$25,806,691	\$143,819	\$43,202	\$0
2009	28,338,446	\$33,698,297	\$174,566	\$44,918	<sup>c</sup>
2010	10,291,590	\$24,269,085	\$130,009	\$25,728	<sup>c</sup>
2011	18,228,922	\$44,247,720	\$225,633	\$31,155	\$13,750
2012	19,032,409	\$44,988,487	\$219,164	\$52,084	\$16,367
2013	30,145,552	\$59,391,598	\$304,526	\$55,673	\$24,487
2014	13,995,803	\$42,806,102	\$183,451	\$61,504	\$23,796
2015	34,353,663	\$34,381,769	\$163,566	\$29,953	<sup>c</sup>
2016	5,031,781	\$14,509,665	\$66,243	\$25,972	\$7,111
Recent 10-year average					
2006–2015	22,334,937	\$36,258,483	\$184,328	\$41,955	\$13,188

<sup>a</sup> Number of fish: Does not include hatchery cost recovery, test fisheries, or personal use harvests.

<sup>b</sup> Exvessel values based on inseason price estimates and do not include postseason adjustments.

<sup>c</sup> Confidential data.

## 2016 Commercial Harvest Summary

### Chinook Salmon

There are no directed Chinook salmon commercial fisheries in the KMA but incidental commercial harvest occurs during targeted sockeye salmon fisheries. The Ayakulik and Karluk river systems

support the largest Chinook salmon populations in the KMA. Non-retention of Chinook salmon was implemented for the seine fleet area wide from June 3 through July 5. Non-retention of Chinook salmon was extended for the seine fleet from July 6 until July 30 along the Westside of Kodiak from the latitude of Cape Kuliuk to the latitude of Low Cape. Both Karluk and Ayakulik Chinook salmon achieved their escapement goals. The 2016 commercial harvest of Chinook salmon in the KMA totaled 7,478 fish which was below the previous 10-year average (16,019 fish) and below the 2016 forecast (15,000 fish; Table 2).

### **Sockeye Salmon**

The 2016 commercial harvest of sockeye salmon totaled 2,063,472 fish. The harvest was slightly below the recent 10-year average (2,200,839 fish) but well below the forecast (3,408,000 fish; Table 2).

Early season management for much of the Westside of Kodiak Island is driven by Karluk early-run sockeye salmon (through July 5). Extended fishing time was allowed along the Westside of Kodiak in the Central, North Cape, Southwest Afognak, and Outer Karluk sections until the management focus turned to pink salmon beginning July 6. A total of 339,940 sockeye salmon were harvested in early-season (through July 15) Westside areas opened based on Karluk early-run sockeye salmon, which was above the forecasted Karluk early-run harvest of 159,000 fish.

Late-season management for much of the Westside of Kodiak Island is driven by the Kodiak Island pink salmon fishery (beginning July 6) and Karluk late-run sockeye salmon (beginning August 16). A total of 670,592 sockeye salmon were commercially harvested in late-season (after July 15) Westside areas opened based on Karluk late-run sockeye salmon and during the Kodiak Island pink salmon fishery, which was similar to the forecasted Karluk late-run harvest of 675,000 fish.

Westside sockeye salmon numbers include an estimated contribution of approximately 174,666 sockeye salmon from the enhanced Spiridon Lake sockeye salmon run of which 82,649 were harvested in Spiridon Bay Special Harvest Area.

The Ayakulik sockeye salmon run was weak and there was only one fishing period during early-run sockeye salmon management (through July 15). A total of 48,619 sockeye salmon were harvested in areas managed based on Ayakulik early-run sockeye salmon. Three short openings were allowed during Ayakulik late-run sockeye salmon management, and the fishery was then closed due to extremely weak Ayakulik pink salmon escapement. A total of 93,128 sockeye salmon were harvested in areas managed based on Ayakulik late-run sockeye salmon. A total 141,747 of sockeye salmon were harvested from Westside sections opened based on Ayakulik returns, which was well below the 2016 forecast of 266,000 fish.

Frazer Lake and Upper Station sockeye salmon runs came in weaker than forecasted. However, both runs were strong enough to allow for limited commercial salmon openings in the traditional fishing areas (i.e. seine and gillnet sections of the Alitak District). To facilitate for longer closures, the non-traditional Dog Salmon Flats Section also opened simultaneously with the traditional areas. This strategy effectively harvested more Frazer sockeye salmon per commercial salmon opening, allowing less Frazer sockeye salmon escapement, permitting the longer Alitak District closures. These longer closures allowed for more early-run sockeye salmon Upper Station escapement. The Alitak District

early-run (through July 15) sockeye salmon harvest was 86,867 fish, below the projected harvest of 182,000 fish.

Upper Station late-run sockeye salmon run came in as weak as expected and very few fishing periods were permitted after August 9. The total harvest of the Alitak District late-run sockeye salmon was 96,428 fish, which was above the forecasted harvest of 80,000.

***Cape Igvak Salmon Management Plan:*** This regulatory management plan (5 AAC 18.360) allocates up to 15% of the total Chignik-bound sockeye salmon harvest to KMA fishermen in the Cape Igvak Section. Based on regulations, ninety percent (90%) of all sockeye salmon caught prior to July 25 in the Cape Igvak Section are considered to be Chignik-bound.

Both Chignik sockeye salmon runs were weaker than forecast but the allocative and biological criteria were met throughout the year. Fishing time was allowed in the Cape Igvak Section during both June and July with 326,740 sockeye salmon harvested through July 25. This was above the preseason forecast of approximately 284,000 fish.

***North Shelikof Strait Sockeye Salmon Management Plan:*** From July 6 to July 25, this regulatory management plan (5 AAC 18.363) places harvest limits on areas along the northern Shelikof Strait to limit interception of sockeye salmon that are considered Cook Inlet-bound. During the period that this management plan is in effect, KMA fisheries are managed based on local pink salmon runs. If it appears that the sockeye salmon harvest will meet or exceed limits set by the management plan, then fisheries are to be restricted to inshore “Shoreward Zones” only, and offshore “Seaward Zones” are closed (Figure 2).

A department biologist was present on the grounds to determine the sockeye salmon catch and to facilitate orderly and short notice closures if the harvest limits are met. A Seaward Zone closure was implemented in the North Shelikof Unit at noon July 10 when it was estimated that the cumulative sockeye salmon harvest had approached the 15,000 fish limit. The total July 6 to July 25 harvest in the North Shelikof Unit was 101,856 sockeye salmon, which included both the Shoreward and Seaward Zone harvests. A Seaward Zone closure did not take place in the Southwest Afognak Section and the harvest cap of 50,000 was never exceeded. Approximately 19,239 sockeye salmon were harvested in the Southwest Afognak Section between July 6 and July 25.

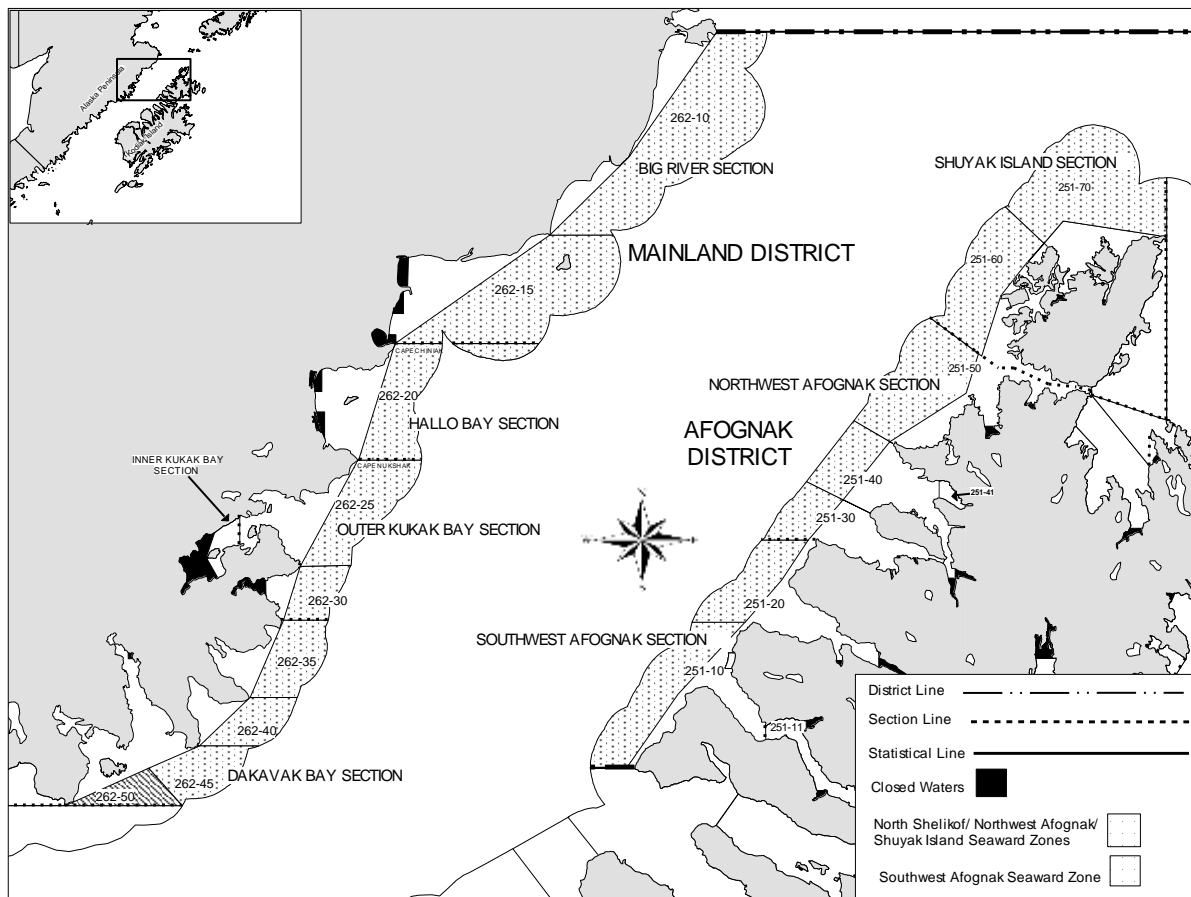


Figure 2.—Map of the North Shelikof Management Area.

**Terminal and Special Harvest Areas:** Some fisheries occur in areas where salmon enhancement projects create surplus production.

There was below average effort and harvest in the Foul Bay Special Harvest Area (SHA) with a total of 8,794 sockeye salmon harvested.

In the Spiridon Bay SHA (Telrod Cove), 82,649 sockeye salmon were harvested. This includes cost recovery fish harvested by Kodiak Regional Aquaculture Association. The harvest in the Spiridon Bay SHA represents only a portion of the total harvest of Spiridon enhancement fish, the remainder is harvested in traditional fisheries along the Westside of Kodiak. It is estimated that 92,017 Spiridon enhancement fish were harvested outside of Telrod Cove, bringing the total Spiridon enhancement sockeye salmon harvest to 174,666 fish.

The Kitoi Bay Hatchery harvest was an estimated 46,872 sockeye salmon, which was below the forecast of 100,000 fish. This includes the commercial harvest of both enhanced and wild salmon from the Inner Kitoi Bay, Outer Kitoi Bay, Duck Bay, and Izhut Bay sections. Additional enhanced sockeye salmon may have been harvested in adjacent sections, but stock separation data are not available.

**Coho Salmon**

The commercial coho salmon harvest of 206,540 fish was below the forecast (330,000 fish) and the previous 10 year average (329,952 fish; Table 2). The majority of the coho salmon were caught in the Westside Kodiak fishery.

**Pink Salmon**

The 2016 pink salmon harvest of 3,245,549 fish was well below the forecast (16,193,000 fish) and the previous 10-year average harvest of 20,721,265 fish, and the smallest harvest since 1975 in the KMA (Table 2).

The wild stock pink salmon harvest was one of the lowest in the past 50 years with 2,100,315 pink salmon harvested in the KMA. The majority of the pink salmon were harvested on the Westside but both Afognak and the Eastside/Northend of Kodiak had significant harvests. Westside pink salmon fisheries (Raspberry Cape to Ayakulik) accounted for 1,090,581 pink salmon, the Afognak District had a harvest of 532,588 pink salmon, the Eastside/Northend Kodiak fisheries had a combined harvest of 204,434 pink salmon, the Alitak District had a harvest of 182,615 pink salmon, and the Mainland District had a harvest of only 90,097.

The Kitoi Bay Hatchery pink salmon run was weaker than expected with 1,145,234 pink salmon harvested in sections near the hatchery (4,293,000 forecast). Kitoi-bound pink salmon were likely harvested along the west and east sides of Kodiak and Afognak islands. Likewise, additional wild stock salmon were likely harvested in areas associated with Kitoi Bay Hatchery. However, the department does not have a stock separation program for pink salmon and is unable to differentiate stocks. There was a cost recovery fishery near the hatchery with sockeye, pink, and chum salmon harvested and sold by the Kodiak Regional Aquaculture Association.

**Chum Salmon**

The chum salmon harvest of 403,879 fish was below the forecast (643,000 fish). Additionally, the Kitoi Bay Hatchery chum salmon production was relatively weak but came in as forecast with a harvest of 72,554 chum salmon (72,000 fish forecast).

**2016 Escapement Summary**

Fish counting weirs were operated on 9 systems in 2016, including the Karluk, Ayakulik, Upper Station, Dog Salmon, Litnik, Buskin, Sallery, Pauls Bay, and Pasagshak systems. Three observers also flew near record low number of aerial surveys, and several observers conducted foot and skiff survey escapement estimates. Due to the lack of sufficient funding peak aerial surveys were not conducted in much of the KMA.

**Chinook Salmon**

The total Chinook salmon escapement (8,126) was above the previous 10-year average (Table 4). Escapement goals for Chinook salmon have been developed for the Karluk and Ayakulik rivers, and escapements are estimated using fish counting weirs (Table 5).

The Chinook salmon escapement through the Karluk River weir (3,434 fish; Table 5) was within the biological escapement goal (BEG) range of 3,000 to 6,000 fish. Chinook salmon escapement through the Ayakulik River weir (4,594 fish; Table 5) was within the BEG range of 4,000 to 8,000 fish.

**Sockeye Salmon**

Sockeye salmon runs in many systems in the KMA were average to below average. All of the major systems met or exceeded their established escapement goals. The entire KMA estimated sockeye salmon escapement of (1,285,363 fish; Table 4) was slightly above the previous 10-year average of 1,220,000 fish (Table 4).

**Coho Salmon**

The only established coho salmon escapement goals occur in the Northeast Kodiak and Eastside Kodiak districts for the following systems: American (400 fish), Olds (1,000 fish), Buskin (3,200 to 7,200 fish) and the Pasagshak rivers (1,200 fish; Table 5). At the time of this report the final estimated escapement numbers have not been calculated.

It is expected that coho salmon enter systems in the fall after weirs have been removed and aerial and foot surveys have concluded. However, due to limited funding the department no longer flies peak or late season salmon surveys, and the area wide coho salmon escapement numbers do not reflect the actual KMA coho salmon escapement.

**Pink Salmon**

The KMA pink salmon escapement of 1,764,586 fish was well below the previous 10-year average of (4,070,000 Fish; Table 4). Pink salmon escapement goals have been established as aggregate goals for the entire Kodiak Archipelago and the Mainland District. The escapement for the Kodiak Archipelago (1,699,281 fish) was well below the escapement goal range of 3.0 to 6.0 million fish (Table 5). The Mainland District pink salmon escapement of 65,305 fish was well below the established escapement goal range (250,000 to 750,000 fish; Table 5). However, due to limited funding the department no longer conducts all peak aerial surveys and both the Kodiak Archipelago and Mainland numbers should be considered minimum estimates.

**Chum Salmon**

The overall chum salmon escapement of 197,285 fish was below the previous 10-year average (375,738 fish; Table 4). Escapement goals have been established for the Kodiak Archipelago and the Mainland District. The escapement in the Kodiak Archipelago was below the escapement goal of 151,000 fish with an estimated 128,585 fish, and the Mainland District escapement of 68,700 fish was well below the escapement goal of 104,000 fish (Table 5). However, due to limited funding the department no longer conducts all peak aerial surveys and both the Kodiak Archipelago and Mainland numbers should be considered minimum estimates.



Table 4. Total salmon escapements in the KMA for all species in 2016, compared to average escapement from 2006 to 2015.

Species	2016 KMA Escapement <sup>a</sup>	2006-2015 Average KMA Escapement
Chinook	8,126	6,005
Sockeye	1,285,363	1,220,824
Coho	62,045	79,686
Pink	1,764,586	4,260,613
Chum	197,285	375,342

<sup>a</sup>2016 escapement estimates are the sum of all weir, aerial survey, and foot survey estimates. These are minimum estimates, and are incomplete due to limited dates of weir operation, limited money for aerial surveys and poor survey conditions. This includes escapement from all streams surveyed including many non-index streams that are not measured against established escapement goals.

Table 5. Salmon peak escapements and escapement goals by species, in the Kodiak Management Area, 2016.

Species	Stream	Escapement Goal		2016 Peak
District/System (stock)	Number	Lower	Upper	Escapement <sup>a</sup>
Chinook				
Karluk	255-101	3,000	6,000	3,434
Ayakulik	256-201	4,000	7,000	4,594
	Total	7,000	13,000	8,028
Sockeye				
Malina	251-105	1,000	10,000	2,000
Afognak	252-342	20,000	50,000	32,459
Uganik	253-122	24,000		34,100
Karluk	255-101			
Early run		110,000	250,000	164,760
Late run		170,000	380,000	324,049
Ayakulik	256-201			
Early run		140,000	280,000	182,589
Late run		60,000	120,000	71,978
Upper Station	257-304			
Early run		43,000	93,000	48,047
Late run		120,000	265,000	145,013
Frazer Lake	257-403	70,000	150,000	122,585
Buskin/Lake Louise	259-211	4,700	9,600	11,740
Pasagshak	259-411	3,000		7,053
Saltery	259-415	15,000	35,000	57,867
	Total	781,000		1,208,340
Pink				
Mainland District		250,000	1,000,000	65,305
Kodiak Archipelago		3,000,000	6,000,000	1,699,281
	Total	3,250,000	7,000,000	1,764,586
Chum				
Mainland District		104,000		68,700
Kodiak Archipelago		151,000		128,585
	Total	255,000		255,000

<sup>a</sup> 2016 escapement estimates are the sum of all weir, aerial survey, and foot survey estimates. These may be minimum estimates only, and are incomplete due to limited dates of weir operation, and poor survey conditions.